

PROJECT REPORT
DBT STAR COLLEGE SCHEME



SUBMITTED BY
LADY IRWIN COLLEGE
UNIVERSITY OF DELHI
NEW DELHI-110001

Department of Biotechnology

Proforma for submission of Annual Progress Report supported under Star College Scheme

1. Name of the College : **LADY IRWIN COLLEGE**
2. Name of Coordinator, designation, Address, Phone nos. **DR. POOJA RAIZADA, ASSOCIATE PROFESSOR, DEPARTMENT OF FOOD & NUTRITION AND FOOD TECHNOLOGY, LADY IRWIN COLLEGE, SIKANDRA ROAD, NEW DELHI-110001**

FOOD TECHNOLOGY: DR. APARNA AGARWAL, ASSISTANT PROFESSOR, DEPARTMENT OF FOOD TECHNOLOGY, LADY IRWIN COLLEGE, SIKANDRA ROAD, NEW DELHI-110001

3. Assessment duration : **1.4.2021 TO 31.3.2022** Duration in years :1
4. Details of Departments Supported

SI No	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate etc) offered	Regular Faculty members	
			Total = 13	
			With Ph.D.	Without Ph.D.
1	FOOD TECHNOLOGY	B.Sc. H Food Technology	12	1

5. **Number & Date of Advisory committee meeting:**
College Advisory Meeting: 12th April 2021, 25th May 2021, 11th August 2021, 18th September 2021, 23rd September 2021, 29th September 2021, 22nd October 2021, 23rd October 2021, 4th February 2022.
6. **Qualitative improvements due to DBT support. Please highlight 5 salient points (within 500 words).**
 - i. Carried out hands-on training experience for students by performing various practicals.
 - ii. Participated and undergone in various training programmes, national workshops and hands on training sessions.
 - iii. Organized and co-ordinated various webinars and workshop.

- iv. Faculties have done several online faculty development programs.
- v. Students were encouraged to do online internships.
- vi. We could organize various national and international webinars with eminent speakers.
- vii. Virtual industrial tours have been organized to acquaint the students about the industrial setup and application aspects.
- viii. Online trainings and skill based workshops being organized to train the students in different domains and enhance the skill set.
- ix. Equipments purchases have been done
- x. Students showed deep interest in conducting the experiments and they were able to think about how to design and perform the experiments with impressive time management.
- xi. Students were able to do hands on exposure through research projects.

These research projects were taken up under DBT grant and key findings are as follows

- a. Green packaging: Extraction of essential oil from fruit waste and incorporation in edible film
- b. Assessing the quality aspect of Plant-based Proteins among different groups of people.
- c. To assess the rising interest for Immunity boosting foods and ingredients during COVID-19 pandemic: A survey on Indian Population.
- d. Development and optimisation of functional plant based beverage using dried peas (*Pisum Sativum* L.)
- e. Bioflavour production sweet lime using *Sacchromyces cerevisiae*
- f. Development of Composite Starch and Lignin Based Biofilms
- g. Fortification of Bengal Gram Flour with Moringa Oleifera Powder
- h. Development of Ready-to-Serve (RTS) Spiced Beverage from Rhododendron (*Rhododendron arboreum*) Flower
- i. Application of lemongrass essential oil (LEO) as an antimicrobial agent in baked food
- j. To study the following physico-chemical properties of different brands of honey
- k. Comparative analysis of vitamin C concentration in commercial and fresh fruit juices
- l. Preparation of fermented mixed fruit flour from byproducts of different fruits.

- m. Review paper on Traditional Herbs and Spices
- n. Review paper on Antimicrobial resistance

7. Any Novel aspect introduced or planning to introduce during the Scheme duration.

- a) National and International Webinars could be organized under DBT support
- b) UG students could take up research projects which helped them to have to build research acumen and proper understanding the doing the research and writing reports.
- c) Skill enhancement and value added workshops and training helped the students to build their personality and practical knowledge
- d) Industrial Virtual tours
- e) Additional practicals in various subjects helped the student to have a better knowledge and understanding of application of the practical and subject.
- f) Intercollege activities like Quiz competitions and Videography competitions etc were organized
- g) Series of sessions for Food Product Development in lab scale. Food Products from millets and non conventional ingredients have been developed.
- h) Case studies done in Entrepreneurship Development to impart knowledge in the area of startups, agribusiness and FBOs.

8. Lessons learnt / difficulties faced/suggestions if any, in implementation of the programme and utilization of DBT grant. (Max 3 points within 300 words).

- a) DBT Star college scheme is an excellent program to strengthen the science at undergraduate level. It has significantly enhanced the technical knowledge and improved the analytical thinking with respect to practicals by performing additional practicals as well as the research projects have enabled them to design and perform the experiments with impressive time management
- b) College could conduct several programs, trainings, workshops (nationally and internationally) through online mode.
- c) Due to pandemic, travel was prohibited so that amount could not be utilized, we request you to kindly reallocate the same to contingency.

6. No. of hands-on experiments being conducted : 14 (List attached)

Additional practicals were done apart from the listed practicals in the syllabus

S.No.	Pre Support	Post Support hands-on experiments conducted
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1.	Additional practical	Quality inspection of various food stuffs- cereals, pulses, spices and condiments etc. (Food Quality Management)
2.	Additional practical	Applications of psychrometry in food industry (Food Engineering)
3.	Additional practical	To prepare edible packaging film and analysing its efficacy for different food products.
4.	Additional practical	To quantify the amount of gluten present on various flours
5.	Additional practical	Demonstration of calibration of thermocouple using potentiometer.
6.	Additional practical	Microbiological analysis of street foods
7.	Additional practical	Identification of molds present on spoiled foods by mold staining
8.	Additional practical	To determine the effect of salt, sugar, temperature, acid on stability of natural emulsion
9.	Additional practical	Nutrition labeling of different food products
10.	Additional practical	To prepare sugar solution and measurement of degree brix by using refractometer.
11.	Additional practical	To determine reducing sugar of different food samples.

12.	Additional practical	Sensory evaluation of market milk and flavour defects
13.	Additional practical	To determine the recognition threshold concentration for the primary tastes.
14.	Additional practical	To perform sensitivity tests for four basic tastes

7. No. of new experiments introduced: 14 (List attached)

S.No.	Pre Support	Post Support
1.	Additional practical	Quality inspection of various food stuffs- cereals, pulses, spices and condiments etc. (Food Quality Management)
2.	Additional practical	Applications of psychrometry in food industry (Food Engineering)
3.	Additional practical	To prepare edible packaging film and analysing its efficacy for different food products.
4.	Additional practical	To quantify the amount of gluten present on various flours
5.	Additional practical	Demonstration of calibration of thermocouple using potentiometer.
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7.	Additional practical	Identification of molds present on spoiled foods by mold staining
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11.	Additional practical	To determine reducing sugar of different food samples.
12.	Additional practical	Sensory evaluation of market milk and flavour defects
13.	Additional practical	To determine the recognition threshold concentration for the primary tastes.
14.	Additional practical	To perform sensitivity tests for four basic tastes

8.Publications (scopus indexed) /patents, if any.

ACHIEVEMENTS

1. Publications

A. Book chapters

Dr. Aparna Agarwal

- Kaur, N., Agarwal, A., Sabharwal, M., & Jaiswal, N. (2021). Natural Food Toxins as Anti-Nutritional Factors in Plants and Their Reduction Strategies. *Food Chemistry: The Role of Additives, Preservatives and Adulteration*, 217-248.
- Kaur, N., Agarwal, A., & Sabharwal, M. (2022). Food Processing By-Products and Waste Utilisation for Bioethanol Production. In *Food Waste to Green Fuel: Trend & Development* (pp. 165-187). Springer, Singapore.

Dr.Bindu

- Book chapter submitted: Waste management of fruits and vegetable industry
BOOK INFORMATION FOR REFERENCE Taylor & Francis Catalog #: 473150 ISBN: 978-1-032-06294-5

Dr. Pulkit Mathur

Edited Books

1. Agarwal, P. & Mathur, P. (Eds) (2021). *Eat Right: A Food Systems Approach*. Food Future Foundation. ISBN 978-93-5526459-6

B. National and International journals

1. Pooja Raizada, Jaya Chandawat, Roli Khanna, Sukriti Jaspal, Anupa Siddhu and Aparna Agarwal. 2021. Antimicrobial Resistance in Poultry Sector in India. *Int.J.Curr.Microbiol.App.Sci.* 10(12): 425-432. doi: <https://doi.org/10.20546/ijcmas.2021.1012.047>
2. Chaturvedi, S., Sabharwal, M., Kaur, N., Agarwal, A., & Kaur, P. (2022). Development of probiotic tomato kulfi. *Indian Journal of Dairy Science*, 75(1): 23-30.
3. Kaur, N., Kumari, A., Agarwal, A., Sabharwal, M., & Dipti, S. (2022). Utilisation of *Diospyros kaki* L. (persimmon) as a functional ingredient to produce functional foods: a review. *Nutrition and Food Science*. <https://doi.org/10.1108/NFS-11-2021-0337>
4. Makhija, S.; Upadhyay, R., Availability of food commodities through urban agricultural practices: a study in Delhi, *International Journal of Scientific and Engineering Research*. 2021, 12 (6): 1250- 1255.
5. Chandhini. S. & Mathur, P. (2022). Comparison of eating behaviour, dietary pattern and activity pattern among normal, underweight and obese women aged 19-30 years in Delhi-NCR. *The Indian Journal of Home Science*, 34(1),117-129.

6. Mediratta, S. & Mathur, P., (2021). Healthfulness of Commonly Eaten Foods in the Indian Diet: Comparison Using 5 Nutrient Profiling Models. *Int J Food Nutr Sci*, 10(4),15-23.
7. Thakur, S. & Mathur, P. (2021). Nutrition knowledge and its relation with dietary behaviour in children and adolescents: a systematic review. *International Journal of Adolescent Medicine and Health*, (), 20200192. <https://doi.org/10.1515/ijamh-2020-0192>
8. Satyapriya, Bishnoi, S., Lenin V., Sangeetha V., Barua, S., Singh, P., Chauhan, J.K., Keshavand and Mathur, P. (2021). Behavioral Intentions of Delhi Consumer's towards Fortified Foods. *Indian Res. J. Ext. Edu.* 21(1), 107-117. 0972-2181 (check if there in last report)
9. Heirangkhongjam, M. D., & Ngaseppam, I. S. (2021). *Rhus chinensis* Mill.: A medicinal plant with promising inhibition of calcium oxalate crystallization, an in-vitro study. *Journal of Herbal Medicine*, 29, 100489.
10. Heirangkhongjam, M. D., & Ngaseppam, I. S. (2021). In vitro digestive activity and stability study of *Rhus chinensis* Mill. fruit and its value added products. *Indian Journal of Natural Products and Resources (IJNPR)[Formerly Natural Product Radiance (NPR)]*, 12(3), 472-479.

9. Training received by faculty

Dr. Aparna Agarwal

- AICTE, ATAL Indian Institute of Food Processing Technology Recent trends in Nonthermal Processing: Prospects and Challenges Oct 4, 2021 to Oct 8, 2021
- ATAL-FDP On “Novel Technological Approaches for Utilization of Food Industry Waste” (September 13-17, 2021)
- IQAC Workshop on NEW NAAC Guidelines-2020 from 2-3rd December, 2021

Dr. Dipesh Aggarwal

- ATAL-FDP On “Novel Technological Approaches for Utilization of Food Industry Waste” (September 13-17, 2021)
- IQAC Workshop on NEW NAAC Guidelines-2020 from 2-3rd December, 2021

Dr. Bindu

- AICTE, ATAL College of Foods & dairy Building Sustainable and resilient Food security and Food Processing systems Oct 25, 2021 to Oct 29, 2021

- AICTE, ATAL College of Food Processing Technology and BioEnergy Non-Thermal Processing of Food Products Dec 27, 2021 to Dec 31, 2021
- AICTE, ATAL Indian Institute of Food Processing Technology Recent trends in Nonthermal Processing: Prospects and Challenges Oct 4, 2021 to Oct 8, 2021
- AICTE, ATAL College of Food Processing Technology and BioEnergy Non-Thermal Processing of Food Products Jun 29, 2021 to Jul 3, 2021
- CPDHE , University of Delhi CPDHE Workshop on MOOCs, E-content Development and Open Educational Resources 15th December 2021 – 21st December 2021

Dr. Shailly Nigam

- Online Workshop on “Innovative Teaching Methodologies and Use of ICT in Teaching” held from 15th December 2021 – 21st December 2021 organized by Centre for Professional Development in Higher Education (CPDHE) (UGC-Human Resource Development Centre), University of Delhi.
- National Workshop on “New NAAC Guidelines 2020” held from 2nd December 2021 to 3rd December 2021 organized by Internal Quality Assurance Cell, Lady Irwin College, University of Delhi.

Dr. Poonam Singh

- Faculty development Programme on "Basics of Research" Mahatama Hansraj Faculty Development Centre, Hansraj College, University of Delhi, 18th June to 24th June 2021.
- Six weeks Internship Training on "Food Testing, Analysis & Quality Evaluation: Opportunities & Challenges" Department of Food Technology, Haldia Institute of Technology & ALS Testing Services, India, 18th June 2021 to 24th July 2021.

Dr. Rupa Upadhyay, Dr. Anjali Sherawat and Dr. Swati Raman attended the online Workshop on MOOCs, E-content development and Open Educational Resources held from 15th December 2021 – 21st December 2021 organized by Centre for Professional Development in Higher Education (CPDHE) UGC-Human Resource Development Centre, University of Delhi

Dr. Anjali Sherawat

- Online workshop on Design and developing e-resources for teaching and learning organized by Rajdhani college, University of Delhi from 22nd June, 2021 to 24th June, 2021

- Online workshop on Design and developing e-resources for teaching and learning Part -II organized by Rajdhani college, University of Delhi from 23rd July, 2021 to 24th July, 2021

10.Exhibitions/seminars /training courses conducted

Webinars Conducted:

- Advances in the Processing of Fermented Dairy Products Dr. Richard Ipsen, Professor Emeritus, University of Copenhagen, Denmark, Thursday, 24th June, 2021
- Orientation to Basics of Mentorship Skills Dr. Renu Kishore (Former Faculty, DU) Dr. Bipin K Tiwary (Associate Professor, DU), Saturday, 3rd July, 2021
- National Webinar on Recent Advances in Food Processing by Dr. C. Anandharamakrishnan Director, IIFPT on October 21, 2021
- Webinar on Food Labelling and Packaging Guidelines for Food industries by Dr. Mamatha Mishra (Food Safety and Nutrition Expert, Founder Green Tick Food Tech Pvt Ltd) and Dr. Subba Rao M Gavaravarapu (Deputy Director and Head Nutrition Information) on 10th Sept 2021
- Startups and Business Opportunities in Food Processing Sector by Mr. Arnab Guha Founder, Director & Chief Visionary Officer, Impeccable Innovations Pvt. Ltd. And Ms Somya and Ms, Shikha, Founder Soha Organics
- International Webinar “Creating Bubble containing Food Structures” presented by Professor Keshavan Nirajan Professor of Food Bioprocessing, Department of Food and Nutritional Sciences, University of Reading, Reading RG6 6AP (UK) on 22nd June 2021
- Invited Talk on Networking Food and Nutritional Sciences for Innovative Food Technologies by Dr. V Prakash, Ex-Director CFTRI on September 15, 2021
- Career counseling session on Getting Ready for the Food Industry, by Mr Areeb Irshad, FSSAI on 28th January, 2022

- International webinar on Overview of Plant Based Beverages, Mr Hemang Dholakia, Leader, South East Asia, Tetrapak Singapore on 4th February, 2022
- Webinar on Biodiversity of North East India, by Ms. Rubeka, IIT Guwahati 8th February, 2022
- Panel Discussion on “Breastfeeding: Myths and Facts” Dr. Achla Batra; Dr. Anupa Siddhu; Dr. Veena Acharya; Dr. Ranjana Sharma; Dr. Ravinder Chadha; Dr. Lalita Verma; Dr. Anita Sabharwal and Dr. Pooja Raizada, Wednesday, 4th August, 2021
- Sustaining Breastfeeding: Challenges and Solutions Dr. Anita Gupta, CMO (SAG), UCMS and GTB Hospital, Friday, 6th August, 2021
- Spectroscopy and its applications on 14.08.2021 by Dr. Alka Gupta, Prof. Department of Chemistry, Dyal Singh College, University of Delhi.
- A travel and travellers perspective on biodiversity and natural landscapes of India on 8.10.21 by Mr.Kumar Bharat, Entrepreneur and Founder Glory trip.
- Advancement and realistic applications in Nanotechnology on 28.02.2022 by Dr. Avshish Kumar, Amity institute of advanced research and studies, Amity University, Noida.

Skill Workshops

- Skill Development Course on Sensory Evaluation of Food and Beverages, in collaboration with Tag taste on 23rd July, 2021

Trainings

- Statistical Data Analysis using Software “R” Mr. Kabiir Nagpal, Corporate Professional and Expert Trainer, 7-8th August, 2021
- “Resume Writing and Excelling Job Interviews” organized by Department of Food and Nutrition, Lady Irwin College on 31st July, 2021.

11. Outreach activities

Popular lectures

- Advances in the Processing of Fermented Dairy Products Dr. Richard Ipsen, Professor Emeritus, University of Copenhagen, Denmark, Thursday, 24th June, 2021
- Orientation to Basics of Mentorship Skills Dr. Renu Kishore (Former Faculty, DU)

Dr. Bipin K Tiwary (Associate Professor, DU), Saturday, 3rd July, 2021

- Skill Development Course on Sensory Evaluation of Food and Beverages, in collaboration with Tag taste on 23rd July, 2021
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- Advancement and realistic applications in Nanotechnology on 28.02.2022 by Dr. Avshish Kumar, Amity institute of advanced research and studies, Amity University, Noida.

Intercollege Competitions

- Poshan Maah Celebrations
 - Poshan Maah 2021 was celebrated by organizing activity titled “Poshan Ke Anmol Mantra”
- World Food Day Celebrations
 - Intercollege recipe competition on Vegetable Mocktail was conducted
 - Intercollege Art from waste competition was conducted
 - Intercollege competition on Meme of Food products
- Industrial Virtual Tour to Haldiram Pvt Ltd on 28th Oct, 2021

11.Invited lectures

Dr. Pooja Raizada

- Panelist for a Panel Discussion; “Developments in Covid care in the field of Medicine, antibody tests and female health” organized by JAIN WELLNESS & COVID CARE on 13th June 2021.
- 4th July 2021, 17th World Congress IFCPC, Open Forum for Eliminating Cervical Cancer – Call for Action, Public Forum , Speaker .Was awarded 20 ICOG points.
- National Panel discussion held in collaboration AOGD (Association of Obstetricians& Gynecologists Delhi) and Food & Nutrition Department Lady
 - a. Irwin College, Topic 'Breast Feeding, Myths and Facts" As a part of celebration of the Breast Feeding week. 4th August 2021
- NARCHIDELCON, Annual Conference organized by Maulana Azad Medical College ,Speaker for Public Forum held on 28th August 2021
- Public Forum on Adolescent Health Issues held on 20th November 2021 during 43rd Annual AOGD Conference, organized by VMMC & Safdarjung Hospital.

- First Prize for Abstract and Poster presentation at IAPEN Indian Clinical Nutrition Congress (ICNC -2022) on 19th & 20th March at AIIMS, New Delhi. Topic “ASSOCIATION OF PERCEIVED STRESS WITH NUTRITIONAL STATUS & NUTRIENT ADEQUACY OF ANTENATAL WOMEN OF URBAN DELHI !!”
- **Poster Presentation:** Development and Optimization of Plant Based Beverage using Pea Proteins

Dr. Aparna Agarwal

- Invited National Level Resource Person- Online Training for State Level District Training, PMFME Scheme, 16th- 18th June, 2021 Organized by: Department of Food and Nutrition and Food Technology Lady Irwin College, University of Delhi
- Invited National Level Resource Person- Online Training for State Level District Training on bakery Products ODOP, PMFME Scheme, Sept, 2021 Organized by: Department of Food and Nutrition and Food Technology Lady Irwin College, University of Delhi
- Invited National Level Resource Person- Online Training for State Level District Training on bakery ODOP, PMFME Scheme, Sept, 2021 Organized by: Department of Food and Nutrition and Food Technology Lady Irwin College, University of Delhi

Dr. Memthoi

- Invited National Level Resource Person- Online Training for Sirmaur District Level Trainers on Fruit and Vegetable Processing with Emphasis on Ginger and Garlic (ODOP), PMFME Scheme, 5th and 6th March, 2021 Organized by: Department of Food Science and Technology, Dr YS Parmar University of Horticulture and Forestry, Nauni, Solan (HP)
- Invited National Level Resource Person- Online Training for State Level District Training on Milk ODOP, PMFME Scheme, 16th- 18th June, 2021 Organized by: Department of Food and Nutrition and Food Technology Lady Irwin College, University of Delhi
- Invited National Level Resource Person- Online Training of New Trainers on Bakery & Confectionery Processing, PMFME Scheme, 20th -28th September, 2021 Organized by: Department of Food and Nutrition and Food Technology Lady Irwin College, University of Delhi

Dr. Rupa Upadhyay– Invited as a member of the Expert Group for the revision of the course “PHT-704 Postharvest Technology and Management of Spices, Plantation Crops, Medicinal &


Aromatic Plants” for PG students of the Department of Horticulture-Post Harvest Technology, AMITY University, NOIDA

Dr. Swati Raman– Invited as Parent Representative on an online talk show on the topic “Technology for Sustainable Societies” organized by SamUrja Educational Society on 26.06.2021

9. Self-Evaluation

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
FOOD TECHNOLOGY	<p>a) Carried out hands-on learning experience for students by performing various additional practicals which enhances knowledge</p> <p>b) Participated and undergone various training programmes, workshops and national and international webinars.</p> <p>c) Organized and co-ordinated various webinars and workshop.</p> <p>d) Conducted industrial virtual tours</p> <p>e) Undertaken research projects under DBT Star College</p> <p>f) These activities to enhance interest in science include invited talks of eminent scientists from Academia and Industry, Seminars, Handson training and workshops.</p> <p>g) One of the objectives of this scheme to have collaboration with various departments to augment the technical knowhow of the subject.</p>	99 %	Due to pandemic, expenditure under travel head could not be utilized.


Course Coordinator
 (With Seal)
DBT Star College Scheme
Lady Irwin College
University of Delhi
New Delhi-110001


Head of the Institution
 (With Seal)
DIRECTOR
Lady Irwin College
(UNIVERSITY OF DELHI)
Sikandra Road, New Delhi-110001

Objectives of Star College Scheme (the blank spaces shall be filled by the college):

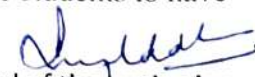
A. To strengthen the academic and physical infrastructure for achieving excellence in teaching and training.

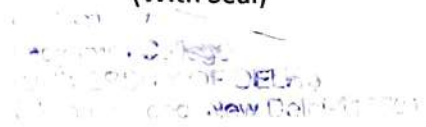
- a) Carried out hands-on learning experience for students by performing various additional practicals which enhances knowledge
- b) Prepared of value-added products and its analysis
- c) Participated and undergone various training programmes, workshops and national and international webinars.
- d) Organized and co-ordinated various webinars and workshop.
- e) Conducted industrial virtual tours
- f) Undertaken research projects under DBT Star College
- g) These activities to enhance interest in science include invited talks of eminent scientists from Academia and Industry, Seminars, Handson training and workshops.
- h) One of the objectives of this scheme to have collaboration with various departments to augment the technical knowhow of the subject.
- i) Additional practical and industrial visits provide the better understanding of the application of the different aspects of food technology.

B. To enhance the quality of the learning and teaching process to stimulate original thinking through 'hands-on' exposure to experimental work and participation in summer schools.

- Students showed deep interest in conducting the experiments and they were able to think about how to design and perform the experiments with impressive time management.
- Hands on training to perform various experiments enabled the students to have


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Head of the Institution
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better understanding of the application of science, processing and technology.

- Research projects under DBT star college have stimulated their research acumen in terms of the designing the experiments, preparation of the experimental work, performing and statistical analysis of results and report writing.
- Review paper writing under DBT star college scheme enabled the students to critical analyse the papers in the field and systematically complete the research paper.

C. To promote networking and strengthen ties with neighboring institutions and other laboratories.

- Industrial visits
- Networking with institutes like NIFTEM
- Internal Auditor training with partner organization
- Collaboration with national level organizations like AFSTI to organize various events like webinars and intercollege competitions
- Networking with organizations to conduct sessions on personality development , resume writing and mock interviews

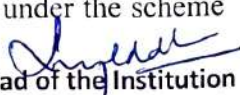
D. To conduct specialized training programmes for faculty improvement for optimizing technical capabilities.

- National Workshop on “New NAAC Guidelines 2020” held from 2nd December 2021 to 3rd December 2021 organized by Internal Quality Assurance Cell, Lady Irwin College, University of Delhi.
- Orientation to Basics of Mentorship Skills Dr. Renu Kishore (Former Faculty, DU) Dr. Bipin K Tiwary (Associate Professor, DU), Saturday, 3rd July, 2021

E. To increase capabilities of core instrumentation resources by procuring new equipment and upgrading of existing facilities.

- Different equipment and instruments have been purchased under the scheme


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to increase the resource facility at the college. Upgradation of the existing facilities would enhance the resources to help the students to do hands on experimental work and research work.

F. To provide access and exposure to students to research laboratories and industries in the country.

- We have been collaborating with research laboratories and industries for internships, summer training to UG students.
- Various competitions have been organized in collaboration with industries
- Online demo sessions by various industries have been organized.

G. To help in devising standard curricula and Standard Operating Procedures (SOP's) / kits for practicals

Department is on process of devising the standard curricula for practicals

H. To provide better library facility to students and teachers.

Department is on process of purchasing books and subscribing journals for B.Sc. H Food Technology students.



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UTILISATION CERTIFICATE
(for the financial year ending 31st March 2021)


(Rs. in lakhs)

1. Title of the project/scheme : **Star College Scheme**
2. Name of the Organisation: **Lady Irwin College**
3. Principal Investigator : **Dr. Pooja Raizada**
4. Dept. of Biotechnology sanction order No. & date of sanctioning the project : **No.BT/HRD/11/04/2020 , 29.2.2020**
5. Amount brought forward from the previous financial year quoting DBT letter No. & date in which the authority to carry forward the said amount was given : **Rs 11.0 Lakh**
6. Amount received from DBT during the financial year (Please give No. and dates of sanction orders showing the amounts paid) : **No.BT/HRD/11/04/2020 , 29.2.2020, Nil**
7. Other receipts/interest earned, if any, on the DBT grants :
8. Total amount that was available for expenditure during the financial year (Sl. nos. 5, 6 and 7): **Rs 11 Lakh**
9. Actual expenditure (excluding commitments) incurred during the financial year (SoE is enclosed) : **Rs 995123.00**


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DBT Star College Scheme
Lady Irwin College
University of Delhi
New Delhi-110001
(With Seal)


Dr. Anupa Siddhu
(Director, Lady Irwin College)
(With Seal)

DIRECTOR
Lady Irwin College
UNIVERSITY OF DELHI
New Delhi-110001


Sr. Assistant Accounts
(With Seal)



10. Unspent balance : **Rs 104877.00**

11. Balance amount available at the end of the financial year : **Rs 104877.00**


12. Amount allowed to be carried forward to the next financial year vide letter No. & date:

1. Certified that the amount of **Rs 995123.00** mentioned against col. 9 has been utilised on the project / scheme for the purpose for which it was sanctioned and that the balance of **Rs 104877.00** remaining unutilized at the end of the year will be adjusted towards the grants-in-aid payable during the next year.
2. Certified that I have satisfied myself that the conditions on which the grants-in-aid was sanctioned have been duly fulfilled / are being fulfilled and that I have exercised the following checks to see that the money was actually utilised for the purpose for which it was sanctioned.

Kinds of checks exercised:

1. Requisition letter and Permission letter from the Purchase Committee, Director
2. Bursar Approval
3. Approved Purchase procedure from GeM portal or authorized dealers (Under DU rate contract)


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**Statement of Expenditure referred to in para 9 of the
Utilisation Certificate**

Showing grants received from the Department of Biotechnology and the expenditure incurred
during the period from 1st April 2021 to 31st March 2022

(Rs. in lakhs)

Item	Unspent balance Carried forward from previous year	Grants received from DBT during the year	Other receipts/ interest earned - if any, on the DBT grants	Total of Col. (2+3+4)	Expenditure (excluding) commitments incurred during the year	Balance(5-6)	Remark
1	2	3	4	5	6	7	8
1. Non-Recurring	10.0	Nil	Nil	10.0	9.95123	4877.00	
2. Recurring	Nil	Nil	Nil	Nil	Nil	Nil	Nil
3. Travel	1.0	Nil	Nil	1.0	Nil	1.0	
4. Contingency	Nil	Nil	Nil	Nil	Nil	Nil	
5. Interest	Nil	Nil					
Total :Expenditure Rs 995123.00, Unspent balance Rs 104877.00							

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